

Site Investigation
Final
Site-Specific Field Sampling Plan Attachment
for the Former Washrack, Building 1740,
Soldier's Chapel, Parcel 127(7)

Fort McClellan
Calhoun County, Alabama

Prepared for:

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Delivery Order CK005
Contract No. DACA21-96-D-0018
IT Project No. 774645

December 1998

Revision 1

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List of Acronyms

| | |
|--------|---|
| ADEM | Alabama Department of Environmental Management |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CERFA | Community Environmental Response Facilitation Act |
| CESAS | Corps of Engineers South Atlantic Savannah |
| CLP | Contract Laboratory Program |
| CSEM | conceptual site exposure model |
| DOD | U.S. Department of Defense |
| DQO | data quality objective |
| EBS | environmental baseline survey |
| EM | electromagnetic |
| EPA | U.S. Environmental Protection Agency |
| ESE | Environmental Science and Engineering, Inc. |
| FTMC | Fort McClellan |
| GPS | global positioning system |
| IDW | investigation-derived waste |
| IT | IT Corporation |
| PCB | polychlorinated biphenyl |
| PID | photoionization detector |
| PSSC | potential site-specific chemical |
| QA/QC | quality assurance/quality control |
| QAP | installation-wide quality assurance plan |
| SAP | installation-wide sampling and analysis plan |
| SFSP | site-specific field sampling plan |
| SI | site investigation |
| SSHPP | site-specific safety and health plan |
| USACE | U.S. Army Corps of Engineers |
| UST | underground storage tank |
| WP | installation-wide work plan |

Executive Summary

In accordance with Contract No. DACA21-96-D-0018, Delivery Order CK005, IT Corporation (IT) will conduct a site investigation at Fort McClellan, Calhoun County, Alabama at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7) to determine the presence or absence of potential site-specific chemicals. This site-specific field sampling plan (SFSP) will provide technical guidance for sampling activities at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7).

Parcel 127(7), Building 1740, Soldier's Chapel is located southeast on Main Post. The Soldier's Chapel faces 8th Street. It is surrounded by a grassy area, and has a paved driveway in front and on the south side. There is a parking lot further southeast along 8th Street. One small building/shed is behind the Chapel, and a concrete pad, which appears to be the foundation for another former small building, is near the southeast corner of the chapel. Adjacent to the southeast corner is a large rectangular metal storm drain cover that is over an underground concrete sump. The sump is a grease trap and appears to connect to the building sewage system. A concrete foundation with the outlines of the former six washracks and a grease pit are located to the rear and to the northeast of the Chapel. Vehicle maintenance was reportedly conducted on vehicles inside Building 1740 and at the washracks/grease rack located behind the building. The washracks and grease pit are located along the edge of a 5- to 6-foot incline or slope which drops to a natural intermittent creek north of the washrack and grease pit.

IT will collect thirteen surface soil samples, thirteen subsurface soil samples, three groundwater samples, two surface water samples, two sediment samples, and one depositional soil sample to be analyzed for volatile organic compounds, semivolatile organic compounds, and metals. Results from these analyses will be compared with site-specific screening levels specified in the installation-wide work plan (WP) and regulatory agency guidelines.

This SFSP attachment to the installation-wide sampling and analysis plan (SAP) (IT, 1998a) for the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127 (7) will be used in conjunction with the site-specific safety and health plan (SSHP), and the installation-wide WP (IT, 1998b) and SAP. The SAP includes the installation-wide safety and health plan, waste management plan, and quality assurance plan. Site-specific hazard analyses are included in the SSHP.

1.0 Project Description

1.1 Introduction

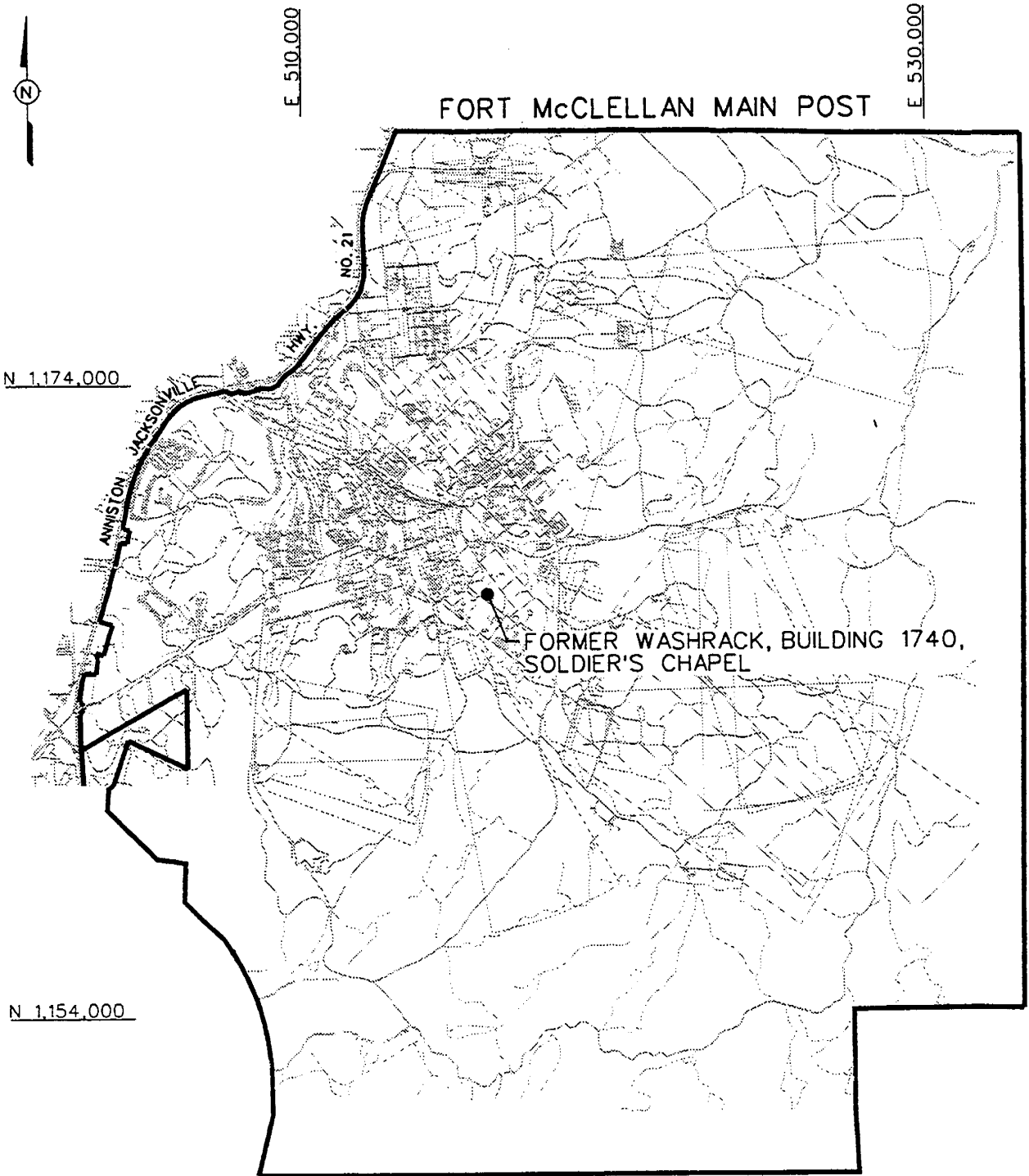
The U.S. Army is conducting studies for the environmental impact of suspected contaminants at Fort McClellan (FTMC) in Calhoun County, Alabama, under the management of the U.S. Army Corps of Engineers (USACE)-Mobile District. The USACE has contracted IT Corporation (IT) to provide environmental services for the site investigation (SI) of the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7) under Delivery Order CK005, Contract No. DACA21-96-D-0018.

This site-specific field sampling plan (SFSP) attachment to the installation-wide sampling and analysis plan (SAP) (IT, 1998a) for FTMC has been prepared to provide technical guidance for sample collection and analysis at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7). The SFSP will be used in conjunction with the site-specific safety and health plan (SSHP) developed for the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7) site, and the installation-wide work plan (WP) (IT, 1998b) and SAP. The SAP includes the installation-wide safety and health plan, waste management plan, and quality assurance plan (QAP).


1.2 Site Description

Parcel 127(7) is located on the southeastern portion of Main Post on 8th Street (Figure 1-1). The Soldier's Chapel faces 8th Street, is surrounded by a grassy area, and has a paved driveway in front and on the south side and a parking lot further south along 8th Street (Figure 1-2). One small building is behind the Chapel, and a concrete pad, which appears to be the foundation of a former smaller building, is near the southeast corner. Immediately adjacent to the southeast corner of the Chapel is a large rectangular metal cover that is over an underground concrete grease trap that appears to connect to the building sewer system. Six washracks and a grease pit are located to the rear and to the northeast of the Chapel. Vehicle maintenance was reportedly conducted on vehicles inside Building 1740 and at the washracks/grease rack located behind the building. The washracks measure approximately 73.5 feet by 20.5 feet in total length and width, and each rack measures approximately 12.5 feet by 20.5 feet. A large sump is located in the center of individual washrack unit. The grease pit was so overgrown with bushes and trees, it was not possible to get an accurate measurement, but it appears to be about 25 feet by 30 feet by 6 to 8 feet deep. The grease pit appeared to have about 1 foot of standing water during an IT

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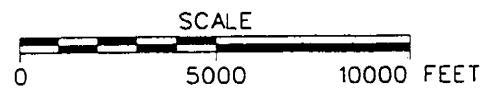


FIGURE 1-1
SITE LOCATION MAP
FORMER WASHRACK, BUILDING 1740
SOLDIER'S CHAPEL
PARCEL 127(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018



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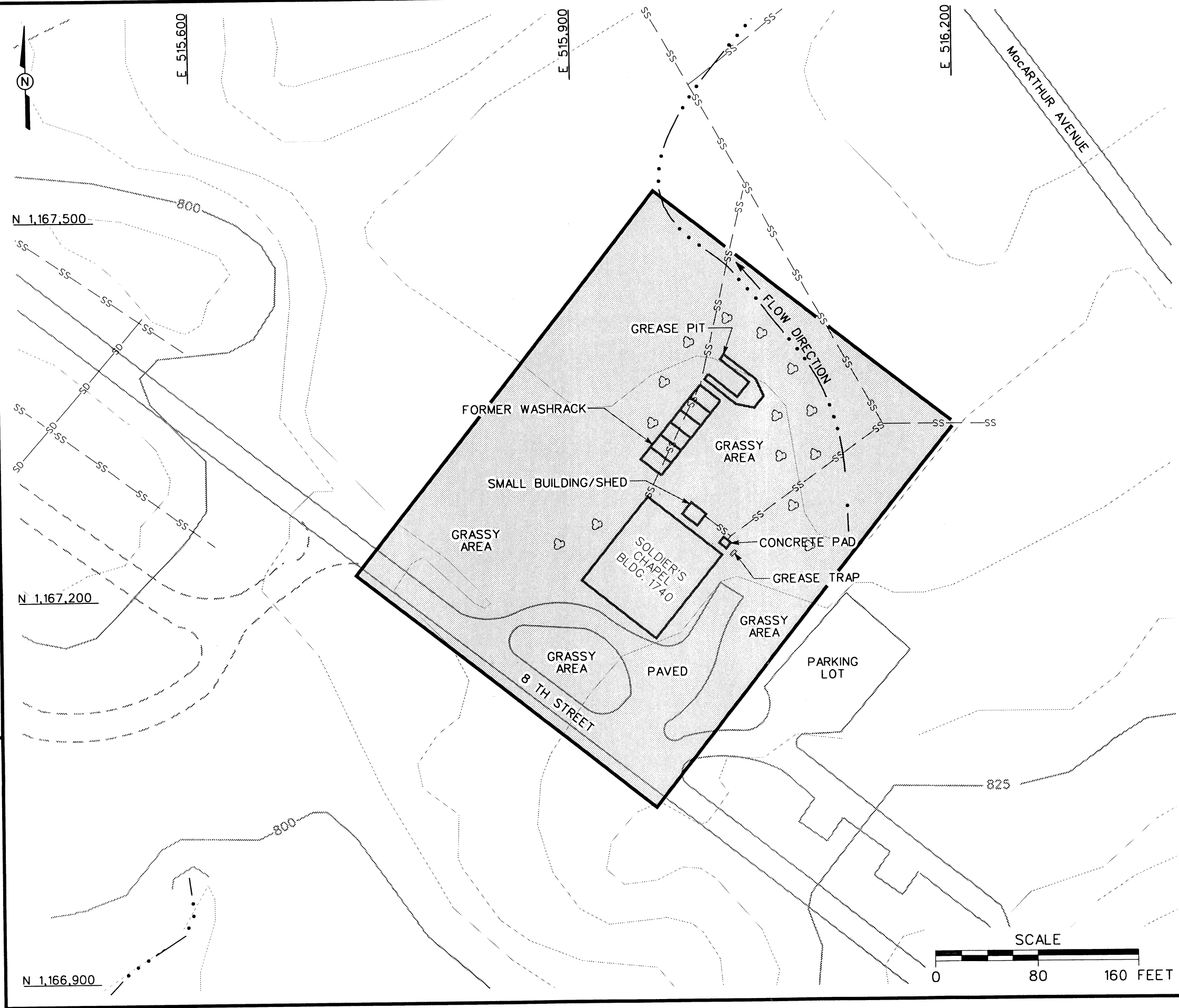
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DRAFT. CHCK. BY:
ENGR. CHCK. BY: A. MAYILA

INITIATOR: C. SHORT
PROJ. MGR.: J. YACOB

DWG. NO.: 4645es.202
PROJ. NO.: 774645



- LEGEND**
- UNIMPROVED ROADS AND PARKING
 - PAVED ROADS AND PARKING
 - BUILDING
 - TOPOGRAPHIC CONTOURS
 - TREES / TREELINE
 - PARCEL BOUNDARY
 - SURFACE DRAINAGE / CREEK
 - SANITARY SEWER LINE
 - STORM DRAINAGE LINE

FIGURE 1-2
SITE MAP
FORMER WASHRACK, BUILDING 1740,
SOLDIER'S CHAPEL
PARCEL 127(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

IT INTERNATIONAL
TECHNOLOGY
CORPORATION

site visit (June, 1998). However, when the grease pit was observed some time later, the grease pit was dry. There were not any drains observed in the bottom of the grease pit. The washracks and grease pit are located along the edge of a 5- to 6-foot incline which drops to a natural intermittent creek north of these structures. The intermittent creek direction is northwest to north and eventually joins Cane Creek. The creek had some damp sand, but did not have any water. The parcel seems flat (except for the incline at the rear of the parcel) with an almost imperceptible slope to the northeast. The site covers approximately 3.3 acres at an elevation of approximately 820 feet.

There are two soil series associated with this parcel: the Allen series and the Anniston series. The Allen Series consists of deep, strongly acid, well-drained soils that have developed in old local alluvium. The parent material washed from the adjacent higher lying soils which developed from weathered sandstone, shale, and quartzite. The surface horizon is chiefly dark grayish-brown fine sandy clay loam. Fragments of sandstone and quartzite, as much as 8 inches diameter, are on the surface and throughout the soil. In Calhoun County, the Allen soils are mapped only with the Anniston as undifferentiated units.

The Anniston Series consists of deep, strongly acid, well-drained soils that have developed in old local alluvium. The parent material has washed from the adjacent, higher lying soils. The surface horizon is mainly very dark brown loam, and the subsoil is mainly dark-red sandy clay loam. Sandstone and quartzite gravel and cobbles, as much as 8 inches in diameter, are on the surface and throughout the soil.

The specific soil type at Parcel 127(7) is Anniston and Allen gravelly loams, 10 to 15 percent slopes, eroded (AcD2). These soils have stronger slopes and more rapid runoff, with severely eroded benches and shallow gullies common in many areas. These areas have a reddish-brown to dark reddish-brown gravelly clay loam surface soil. Infiltration is slow, and capacity for available moisture is low. Depth to water is typically greater than 20 feet, and depth to bedrock (limestone or shale) is typically from 2 feet to greater than 10 feet.

1.3 Scope of Work

The scope of work for activities associated with the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7), as specified in the statement of work (USACE, 1998), includes the following tasks:

- Develop the SFSP attachment.
- Develop the SSHP attachment.
- Collect thirteen surface soil, thirteen subsurface soil, two sediment, two surface water, three groundwater, and one depositional soil sample to determine the presence or absence of contamination, if any, at the site and provide data useful in any future planned corrective measures and closure activities.

Upon completion of the field activities and sample analyses, draft and final reports will be prepared to evaluate the absence or presence of contaminants at this site, and to recommend further remedial action, if appropriate.

2.0 Summary of Previous Environmental Studies

Environmental Science and Engineering, Inc. (ESE) conducted an environmental baseline survey (EBS) to document current environmental conditions of all FTMC property (ESE, 1998). The study identified sites that, based on available information, have no history of contamination and comply with U.S. Department of Defense (DOD) guidance on fast-track cleanup at closing installations. The EBS also provides a baseline picture of FTMC properties by identifying and categorizing the properties by seven criteria.

1. Areas where no storage, release, or disposal (including migration) has occurred.
2. Areas where only storage has occurred.
3. Areas of contamination below action levels.
4. Areas where all necessary remedial actions have been taken.
5. Areas of known contamination with removal and/or remedial action underway.
6. Areas of known contamination where required response actions have not been taken.
7. Areas that are not evaluated or require further evaluation.

The EBS was conducted in accordance with the Community Environmental Response Facilitation Act (CERFA) (CERFA-Public Law 102-426) protocols and DOD policy regarding contamination assessment. Record searches and reviews were performed on all reasonably available documents from FTMC, Alabama Department of Environmental Management (ADEM), U.S. Environmental Protection Agency (EPA) Region IV, and Calhoun County, as well as a database search of Comprehensive Environmental Response, Compensation, and Liability Act-regulated substances, petroleum products, and Resource Conservation and Recovery Act-regulated facilities. Available historic maps and aerial photographs were reviewed to document historic land uses. Personal and telephone interviews of past and present FTMC employees and military personnel were conducted. In addition, visual site inspections were conducted to verify conditions of specific property parcels. The Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7) was identified as Category 7 CERFA site; a site where further evaluation is needed. Previous environmental studies have not been conducted at this site.

3.0 Site-Specific Data Quality Objectives

3.1 Overview

The data quality objectives (DQO) process is followed to establish data requirements. This process ensures that the proper quantity and quality of data are generated to support the decision-making process associated with the action selection for the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7). This section incorporates the components of the DQO process described in the EPA publication EPA 540-R-93-071 *Data Quality Objectives Process for Superfund, Interim Final Guidance* (EPA, 1993). The DQO process as applied to the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7) is described in more detail in Section 4.3 of the WP. Table 3-1 provides a summary of the factors used to determine the appropriate quantity of samples, the procedures necessary to meet the objectives of the SI, and to establish a basis for future action at this site.

The samples will be analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Chapter 4.0 in this SFSP and Table 6-1 in the QAP. Data will be reported and evaluated in accordance with Corps of Engineers South Atlantic Savannah (CESAS) Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of the QAP). Chemical data will be reported by the laboratory in Contract Laboratory Program (CLP)-like forms. These packages will be validated in accordance with EPA National Functional Guidelines by Level III criteria.

3.2 Data Users and Available Data

The intended data users and available data related to the site investigation at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7), presented in Table 3-1, have been used to formulate a site-specific conceptual model presented in Section 3.3 below. This conceptual model was developed to support the preparation of this SFSP, which is necessary to meet the objectives of these activities and to establish a basis for future action at the site. The data users for the data and information generated during field activities are primarily the EPA, USACE, ADEM, FTMC, and the USACE supporting contractors. This SFSP, along with the necessary companion documents, has been designed to provide the regulatory agencies with sufficient detail to reach a determination as to the adequacy of the scope of work. The program has also been designed to provide the level of defensible data and information required to confirm or rule out the existence of residual potential site-specific chemical (PSSC) in the site media.

Table 3-1

**Summary of Data Quality Objectives
Former Washrack, Building 1740,
Soldier's Chapel, Parcel 127(7)
Fort McClellan, Calhoun County, Alabama**

| Potential Data Users | Available Data | Conceptual Site Model | Media of Concern | Data Uses and Objectives | Data Types | Analytical Level | Data Quantity |
|--|----------------|--|--------------------------|--|---|--|---|
| EPA ADEM USACE DOD IT Corporation Other Contractors | None | <u>Contaminant Source</u> Washrack and Grease Pit area at Building 1740 | <u>Surface soil</u> | SI to confirm whether potential site-specific chemicals are present in the site media. | <u>Surface Soil</u> TCL VOCs TCL SVOCs TAL Metals | Definitive + CESAS Level B Data Package | 13 direct-push soil samples + QC |
| | | <u>Migration Pathways</u> Dust emissions and volatilization from soil. Infiltration to subsurface soil. Leaching and infiltration from soil to groundwater. Runoff and erosion from soil to surface water and sediment. Groundwater discharge to surface water. | <u>Subsurface soil</u> | | | | |
| | | | <u>Groundwater</u> | Definitive quality data for future decision making | <u>Subsurface Soil</u> TCL VOCs TCL SVOCs TAL Metals | Definitive + CESAS Level B Data Package | 13 direct-push soil samples + QC |
| | | | <u>Surface water</u> | | | | |
| | | | <u>Sediment</u> | | | | |
| | | | <u>Depositional Soil</u> | | <u>Groundwater</u> TCL VOCs TCL SVOCs TAL Metals | Definitive + CESAS Level B Data Package | 3 direct-push ground-water samples + QC |
| | | | | | <u>Surface Water</u> TCL VOCs TCL SVOCs TAL Metals | Definitive + CESAS Level B Data Package | 2 surface water samples +QC |
| | | <u>Potential Receptors</u> Resident (future) Groundskeeper (current and future) Construction worker (future) Recreational site (future) | | | <u>Sediment</u> TCL VOCs TCL SVOCs TAL Metals TOC Grain Size | Definitive + CESAS Level B Data Package | 2 sediment samples + QC |
| | | <u>PSSC</u> Petroleum products, diesel fuel, waste oil; possibly solvents and metals. | | | <u>Depositional Soil</u> TCL VOCs TCL SVOCs TAL Metals | Definitive + CESAS Level B Data Package | 1 depositional soil sample +QC |

ADEM - Alabama Department of Environmental Management.
CESAS - Corps of Engineers South Atlantic Savannah.
DOD - U.S. Department of Defense.
EPA - U.S. Environmental Protection Agency.
PSSC - Potential site-specific chemical(s).

QC - Quality control.
SI - Site investigation.
SVOC - Semivolatile organic compound.
TOC - Total organic carbon.

USACE - U.S. Army Corps of Engineers.
VOC - Volatile organic compound.
TAL - Target analyte list.
TLC - Target compound list.

3.3 Conceptual Site Exposure Model

The conceptual site exposure model (CSEM) provides the basis for identifying and evaluating the potential risks to human health in the risk assessment. The CSEM includes the receptors appropriate to all plausible scenarios, and the potential exposure pathways. Graphically presenting all possible pathways by which a potential receptor may be exposed, including all sources, release and transport pathways, and exposure routes, facilitates consistent and comprehensive evaluation of risk to human health, and helps to ensure that potential pathways are not overlooked. The elements necessary to construct a complete exposure pathway and develop the CSEM include:

- Source (i.e., contaminated environmental) media
- Contaminant release mechanisms
- Contaminant transport pathways
- Receptors
- Exposure pathways.

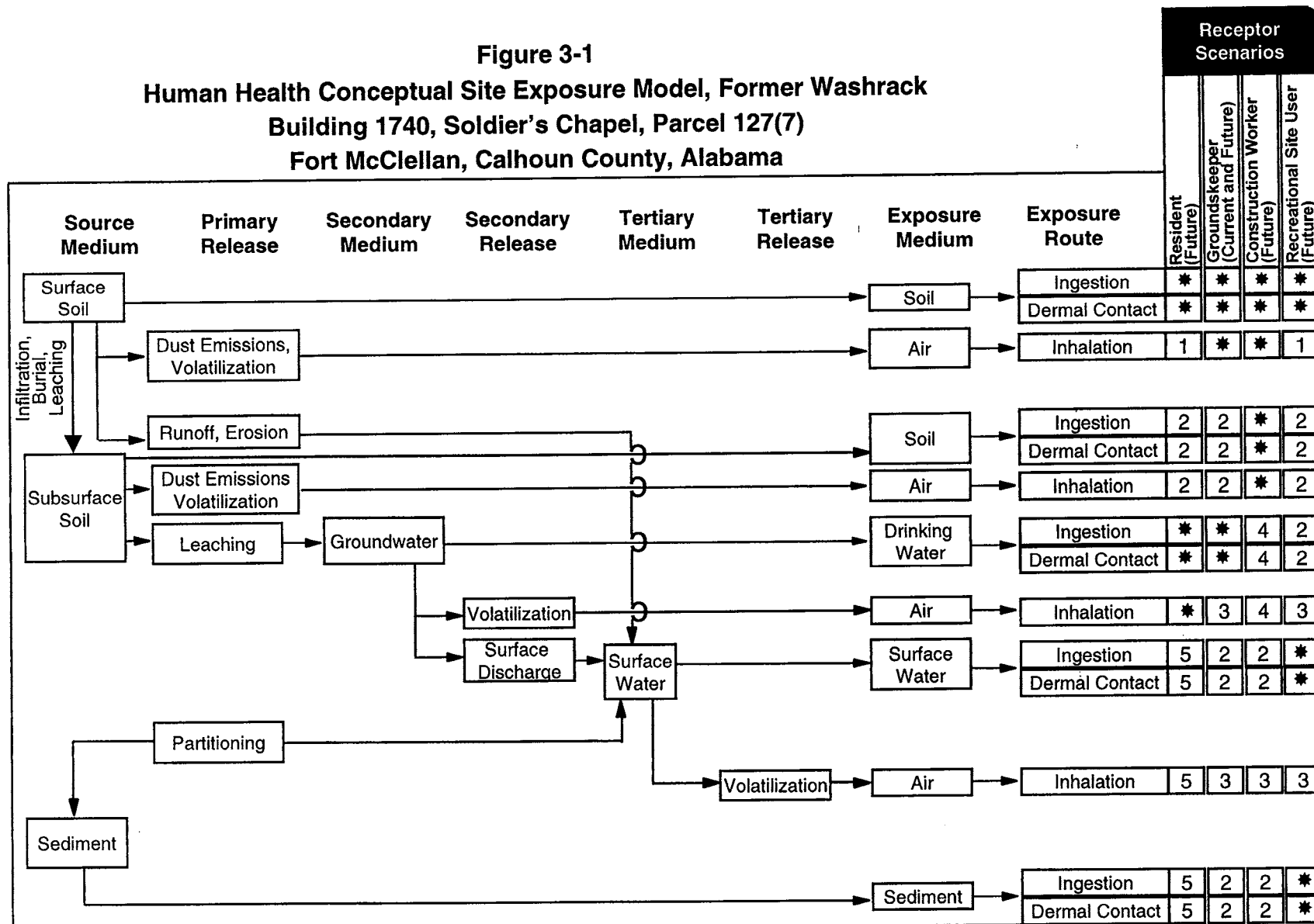
Contaminant release mechanisms and transport pathways are not relevant for direct receptor contact with a contaminated source medium.

Parcel 127(7) consists of a small chapel, the remains of a few other small structures, a washrack, a grease pit, an associated paved driveway, and surrounding grassy area. The area will most likely be used for industrial purposes in the future. The buildings are serviced by an underground sewer system via a storm drain and underground sump. The sump is located at the east corner of the chapel. Water and potential chemicals of concern from the washrack and grease pit activities flowed to a drain in the center of each unit and to the sump and sewer system. Potential contaminant transport pathways include: dust emissions and volatilization from soil to air, infiltration to subsurface soil, leaching from soil to groundwater, runoff and erosion to surface water and sediment, and groundwater discharge to surface water. Media of concern include surface soil, subsurface soil, groundwater, and surface water and sediments that may have been contaminated by activities in the washrack and grease pit area.

The following receptors are were considered in developing the CSEM:

- The resident scenario is included for future purposes to ensure that the investigation is adequately conservative.
- The groundskeeper scenario is considered for current and future purposes because the grass surrounding the chapel is currently mowed during the warmer months and will probably be mowed in the future as well.

Figure 3-1
Human Health Conceptual Site Exposure Model, Former Washrack
Building 1740, Soldier's Chapel, Parcel 127(7)
Fort McClellan, Calhoun County, Alabama



* = Complete exposure pathway quantified in SSSL development.

1 = Volatilization from undisturbed surface soil deemed insignificant; soil is likely to be paved or vegetated, reducing dust emissions to insignificant levels; inhalation pathway not quantified.

2 = Incomplete exposure pathway.

3 = Although theoretically complete, this pathway is judged to be insignificant.

4 = Although theoretically complete, these pathways are not quantified for the construction worker because SSSLs developed for the groundskeeper would be at least as restrictive.

5 = Although theoretically complete, SSSLs for these pathways are developed only for the recreational site user. SSSLs developed for the recreational site user may be used to estimate risk for this receptor.

- The construction worker scenario is considered for future purposes only, because the site is currently not under construction, but could undergo construction in preparing for, or during, future use(s).
- The recreational site user scenario is considered for future use only. The area is currently not used for recreation purposes, but may be in the future.
- The venison and fish consumption scenarios are excluded as this area is not large enough to support substantive hunting activities and the seasonal tributary would not support fishing activities.

A summary of relevant contaminant release and transport mechanisms, source and exposure media, and receptors and exposure pathways is provided by Table 3-1 and Figure 3-1.

3.4 Decision-Making Process, Data Uses, and Needs

The decision-making process consists of a seven-step process that is presented in detail in Sections 3.2 and 4.3 of the WP and will be followed during the SI at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7). Data uses and needs are summarized in Table 3-1.

3.4.1 Risk Evaluation

Confirmation of contamination at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7), will be based on a comparison of detected site chemicals concentrations with site-specific screening levels and background concentrations developed in the WP. EPA definitive data with CESAS Level B data packages will be used to achieve detection limits sufficient to determine whether or not the established guidance criteria are exceeded in site media. Definitive data will be adequate for confirming the presence of site contamination and for supporting a feasibility study and risk assessment.

Assessment of potential ecological risk associated with sites or parcels (e.g., surface water and sediment sampling, specific ecological assessment methods, etc.) will be addressed in the installation-wide work plan.

3.4.2 Data Types and Quality

Surface and subsurface soil, groundwater, surface water, sediment, and depositional soil will be sampled and analyzed in order to meet the objectives of the site investigation at the Former

Washrack, Building 1740, Soldier's Chapel, Parcel 127(7). Quality assurance/quality control (QA/QC) samples will be collected for all sample types as described in Chapter 4.0 of this SFSP.

Samples will be analyzed by EPA-approved SW-846 methods, including Update III methods where applicable. Samples will be analyzed by EPA-approved SW-846 methods, where available; comply with EPA definitive data requirements; and be reported using hard copy data packages. In addition to meeting the quality needs of this SI, data analyzed at this level of quality are appropriate for all phases of site characterization, remedial investigation, and risk assessment.

3.4.3 Precision, Accuracy, and Completeness

Laboratory requirements of precision, accuracy, and completeness for this SI are provided in Section 9.0 of the QAP.

4.0 Field Activities

The parcel of property being investigated under this SI was identified during the EBS (ESE, 1998) and categorized as a Category 7 site. Category 7 indicates the sites that have not been evaluated or that need additional investigation. To meet the objectives of Section 1.3 and Chapter 3.0, the environmental sampling program will consist of surface and subsurface soil sampling, groundwater sampling, surface water sampling, and sediment sampling (or depositional soil sampling). Depositional soil samples will be collected at the surface water/sediment locations if the drainage/stream is dry.

4.1 Utility Clearances

Prior to performing any intrusive sampling, a utility clearance will be performed at all locations where soil and groundwater samples will be collected, using the procedure outlined in Section 4.2.6 of the SAP. The site manager will mark the proposed locations with stakes, coordinate with the installation to clear the proposed locations for utilities, and obtain digging permits. Once the locations are cleared, the stakes will be labeled as cleared.

4.2 Environmental Sampling

The environmental sampling performed during the site investigation at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7), will include the collection of surface soil, subsurface soil, groundwater, surface water, sediment, and depositional soil for chemical analysis. The placement of sample locations was determined by site physical characteristics noted during a site walk-over, and by review of historical documents pertaining to activities conducted at the site. The sample locations, media, and rationale are summarized in Table 4-1.

Samples will be submitted for laboratory analyses for the parameters listed in Section 4.6. The sample designations and QA/QC sample quantities are shown in Tables 4-2, 4-3 and 4-4.

4.2.1 Surface Soil Sampling

Thirteen surface soil samples will be collected from the thirteen soil borings installed at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7) site.

4.2.1.1 Sample Locations and Rationale

The surface soil sampling rationale is presented in Table 4-1. Proposed sampling locations are shown on Figure 4-1. Surface soil sample designations, depths, and required QA/QC sample

Table 4-1

**Site Sampling Rationale
Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7)
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 2)

| Sample Location | Media | Rationale |
|-----------------|--|--|
| PPMP-127-GP01 | Surface soil Subsurface soil Groundwater | Surface soil, subsurface soil and groundwater will be collected upgradient near the foot of the incline at the south boundary to determine if potential site-specific contaminant(s) (PSSC) are present. |
| PPMP-127-GP02 | Surface soil Subsurface soil Groundwater | Surface soil, subsurface soil and groundwater will be collected at the foot of the incline near the south end of the grease pit to determine if PSSC are present. |
| PPMP-127-GP03 | Surface soil Subsurface soil Groundwater | Surface soil, subsurface soil and groundwater will be collected at the foot of the incline downgradient of the washrack to determine if PSSC are present. |
| PPMP-127-GP04 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected at a distance approximately midway of the small building and the concrete pad east behind the chapel to determine if PSSC are present. |
| PPMP-127-GP05 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected east and downgradient of the grease pit to determine if PSSC are present. |
| PPMP-127-GP06 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected behind the grease pit (north) near the opening to determine if PSSC are present. |
| PPMP-127-GP07 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected on the north side of the Washrack to determine if PSSC are present. |
| PPMP-127-GP08 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected at the west end of the Washrack to determine if PSSC are present. |
| PPMP-127-GP09 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected on the south side of the Washrack to determine if PSSC are present. |
| PPMP-127-GP10 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected near the main door (northwest) of Building 1740 to determine if PSSC are present. |
| PPMP-127-GP11 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected near the south door of Building 1740 to determine if PSSC are present. |
| PPMP-127-GP12 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected near the center of the north wall of Building 1740 to determine if PSSC are present. |
| PPMP-127-GP13 | Surface soil Subsurface soil | Surface soil and subsurface soil will be collected near the door at the southeast corner of Building 1740 to determine if PSSC are present. |

Table 4-1

**Site Sampling Rationale
Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7)
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 2)

| Sample Location | Media | Rationale |
|------------------|---------------------------|--|
| PPMP-127-DEP01 | Depositional soil | Depositional soil will be collected upgradient of the parcel from the natural drainage at the foot of the embankment to determine if PSSC are present. |
| PPMP-127-SW/SD01 | Surface water Sediment | Surface water and sediment will be collected from the small drainage/stream at an upgradient location to determine if PSSC are present. |
| PPMP-127-SW/SD02 | Surface water Sediment | Surface water and sediment will be collected from the small drainage/stream at a downgradient location to determine if PSSC are present. |

Table 4-2

Surface and Subsurface Soil Sample Designations and QA/QC Sample Quantities
Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7)
Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample Designation | Sample Depth (ft) | QA/QC Samples | | | Analytical Suite |
|-----------------|--|-------------------|----------------------------|----------------------------|---|---------------------------------|
| | | | Field Duplicates | Field Splits | MS/MSD | |
| PPMP-127-GP01 | PPMP-127-GP01-SS-KR0001-REG PPMP-127-GP01-DS-KR0002-REG | 0-1 a | | | PPMP-127-GP01-SS-KR0001-MS PPMP-127-GP01-SS-KR0001-MSD | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP02 | PPMP-127-GP02-SS-KR0003-REG PPMP-127-GP02-DS-KR0004-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP03 | PPMP-127-GP03-SS-KR0005-REG PPMP-127-GP03-DS-KR0008-REG | 0-1 a | PPMP-127-GP03-SS-KR0006-FD | PPMP-127-GP03-SS-KR0007-FS | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP04 | PPMP-127-GP04-SS-KR0009-REG PPMP-127-GP04-DS-KR0010-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP05 | PPMP-127-GP05-SS-KR0011-REG PPMP-127-GP05-DS-KR0012-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP06 | PPMP-127-GP06-SS-KR0013-REG PPMP-127-GP06-DS-KR0014-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP07 | PPMP-127-GP07-SS-KR0015-REG PPMP-127-GP07-DS-KR0016-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP08 | PPMP-127-GP08-SS-KR0017-REG PPMP-127-GP08-DS-KR0018-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP09 | PPMP-127-GP09-SS-KR0019-REG PPMP-127-GP09-DS-KR0020-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP10 | PPMP-127-GP10-SS-KR0021-REG PPMP-127-GP10-DS-KR0022-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP11 | PPMP-127-GP11-SS-KR0023-REG PPMP-127-GP11-DS-KR0024-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP12 | PPMP-127-GP12-SS-KR0025-REG PPMP-127-GP12-DS-KR0026-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |
| PPMP-127-GP13 | PPMP-127-GP13-SS-KR0027-REG PPMP-127-GP13-DS-KR0028-REG | 0-1 a | | | | TCL VOCs, TCL SVOCs, TAL Metals |

^a Actual sample depth selected for analysis will be at the discretion of the onsite geologist and will be based on field observation.

FD - Field duplicate.

FS - Field sample.

MS/MSD - Matrix spike/matrix spike duplicate.

QA/QC - Quality assurance/quality control.

REG - Regular.

SVOC - Semivolatile organic compound.

TAL - Target analyte list.

TCL - Target compound list.

VOC - Volatile organic compound.

Table 4-3

**Groundwater Sample Designations and QA/QC Sample Quantities
Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7)
Fort McClellan, Calhoun County, Alabama**

| Sample Location | Sample Designation | Sample Depth (ft) | QA/QC Samples | | | Analytical Suite |
|-----------------|-----------------------------|-------------------|----------------------------|----------------------------|---|--|
| | | | Field Duplicates | Field Splits | MS/MSD | |
| PPMP-127-GP01 | PPMP-127-GP01-GW-KR3001-REG | a | | | PPMP-127-GP01-GW-KR3001-MS PPMP-127-GP01-GW-KR3001-MSD | TCL VOCs, TCL SVOCs, Total TAL Metals |
| PPMP-127-GP02 | PPMP-127-GP02-GW-KR3002-REG | a | | | | TCL VOCs, TCL SVOCs, Total TAL Metals |
| PPMP-127-GP03 | PPMP-127-GP03-GW-KR3003-REG | a | PPMP-127-GP03-GW-KR3004-FD | PPMP-127-GP03-GW-KR3005-FS | | TCL VOCs, TCL SVOCs, Total TAL Metals |

*Sample depth will depend on where sufficient first water is encountered to collect a water sample.

FD - Field duplicate.

FS - Field sample.

MS/MSD - Matrix spike/matrix spike duplicate.

QA/QC - Quality assurance/quality control.

REG - Regular.

SVOC - Semivolatile organic compound.

TAL - Target analyte list.

TCL - Target compound list.

VOC - Volatile organic compound.

Table 4-4

Surface Water, Sediment, and Depositional Soil Sample Designations and QA/QC Sample Quantities
Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7)
Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample Designation | Sample Depth (ft) | QA/QC Samples | | | Analytical Suite |
|------------------|--------------------------------|-------------------|------------------|--------------|--------|--|
| | | | Field Duplicates | Field Splits | MS/MSD | |
| PPMP-127-SW/SD01 | PPMP-127-SW/SD01-SW-KR2001-REG | N/A | | | | TCL VOCs, TCL SVOCs, TAL Metals w/ TOC, Grain size (for sediment only) |
| | PPMP-127-SW/SD01-SD-KR1001-REG | 0-0.5 | | | | |
| PPMP-127-SW/SD02 | PPMP-127-SW/SD02-SW-KR2002-REG | N/A | | | | TCL VOCs, TCL SVOCs, TAL Metals w/ TOC, Grain size (for sediment only) |
| | PPMP-127-SW/SD02-SD-KR1002-REG | 0-0.5 | | | | |
| PPMP-127-DEP01 | PPMP-127-DEP01-DEP-KR0023-REG | 0-1 | | | | TCL VOCs, TCL SVOCs, TAL Metals |

MS/MSD - Matrix spike/matrix spike duplicate.

QA/QC - Quality assurance/quality control.

REG - Regular field sample.

SVOC - Semivolatile organic compound.

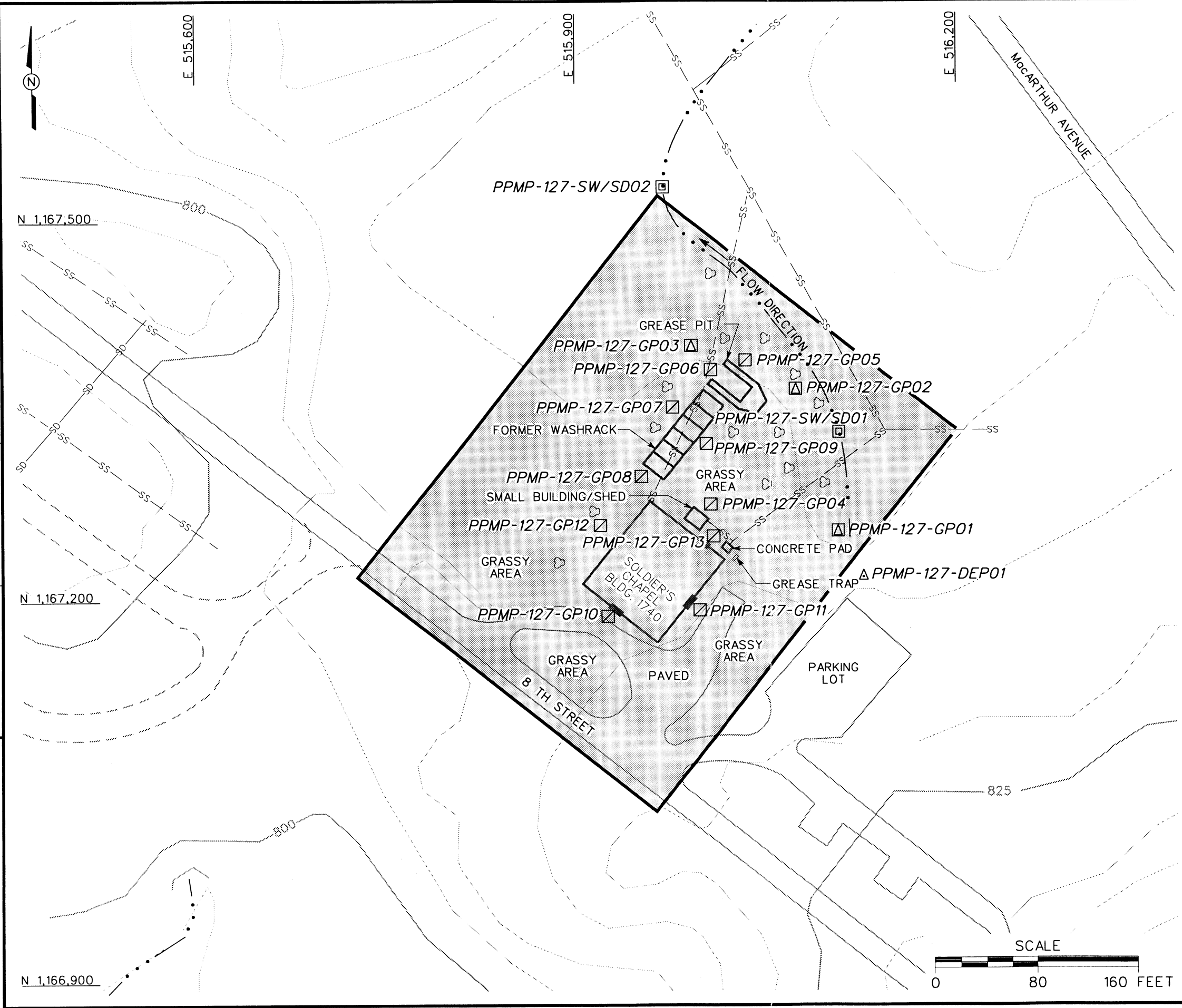
TAL - Target analyte list.

TCL - Target compound list.

TOC - Total organic compound.

VOC - Volatile organic compound.

N/A - Not applicable.



LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING WITH DOORS
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- SANITARY SEWER LINE
- STORM DRAINAGE LINE
- PROPOSED SURFACE WATER/SEDIMENT SAMPLE
- PROPOSED SURFACE AND SUBSURFACE SOIL SAMPLE
- PROPOSED GROUNDWATER, SURFACE AND SUBSURFACE SOIL SAMPLE
- PROPOSED DEPOSITIONAL SOIL SAMPLE

FIGURE 4-1
PROPOSED SAMPLE LOCATIONS
FORMER WASHRACK, BUILDING 1740,
SOLDIER'S CHAPEL
PARCEL 127(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

IT INTERNATIONAL
TECHNOLOGY
CORPORATION

quantities are listed in Table 4-2. The exact soil boring sampling locations will be determined in the field by the on-site geologist.

4.2.1.2 Sample Collection

The surface soil samples will be collected from the upper 1- foot of soil by direct-push technology using the methodology specified in Section 4.7.1.1 of the SAP. Collected soil samples will be screened using a photoionization detector (PID) for information only, in accordance with Section 4.15 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. Sample documentation and chain of custody will be recorded as specified in Section 4.13 of the SAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

4.2.2 Subsurface Soil Sampling

Thirteen subsurface soil samples will be collected from the thirteen soil borings installed at the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7) site.

4.2.2.1 Sample Locations and Rationale

The subsurface soil samples will be collected from the proposed soil borings shown on Figure 4-1. The subsurface soil sampling rationale is presented in Table 4-1. The subsurface soil sample designations, depths, and required QA/QC sample quantities are listed in Table 4-2. The exact soil boring sampling locations will be determined in the field by the on-site geologist.

4.2.2.2 Sample Collection

The subsurface soil samples will be collected from soil borings at a depth greater than 1 foot below the ground surface in the unsaturated zone. The soil borings will be advanced and soil samples collected using the direct-push sampling procedures specified in Section 4.7.1.1 of the SAP.

Sample documentation and chain of custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

Soil samples will be collected continuously for the first 12 feet or until groundwater or refusal is reached. A detailed lithology log will be written by the on-site geologist for each borehole. Collected subsurface soil samples will be field screened using a PID in accordance with Section 4.5 of the SAP to measure samples exhibiting elevated readings above background (readings in ambient air). Typically, the sample showing the highest reading (above background) will be selected and sent to the laboratory for analysis. If none of the samples collected indicate readings above background on the PID, the deepest interval from the soil boring will be collected and sent to the laboratory for analysis. Subsurface soil samples will be selected for analyses from any depth interval if the on-site geologist suspects PSSC. Site conditions such as lithology may also determine the actual sample depth interval submitted for analyses. More than one subsurface soil sample will be collected if field measurements and observations indicate a possible layer of PSSC and/or additional sample data would provide insight for determining the existence of any PSSC. Any additional subsurface samples will be collected at the discretion of the on-site geologist based on field observations.

4.2.3 Direct-Push Groundwater Sampling

Three groundwater samples will be collected from direct-push temporary wells. The direct-push temporary wells will be completed in three of the thirteen soil borings to collect groundwater samples.

4.2.3.1 Sample Locations and Rationale

The groundwater samples will be collected from the direct-push temporary well locations shown on Figure 4-1. Groundwater sampling rationale is presented in Table 4-1. The groundwater sampling designations and required QA/QC sample quantities are listed in Table 4-3. The exact sampling locations will be determined in the field by the on-site geologist.

4.2.3.2 Sample Collection

Groundwater samples will be collected in accordance with the procedures specified in Section 4.7.1.1 of the SAP. The direct-push temporary well at each location will be completed at the water table surface (to a depth where sufficient water is encountered) to collect a groundwater sample.

At direct-push temporary well locations, where either refusal is reached before encountering water or direct-push temporary wells do not yield sufficient groundwater for laboratory analysis, conventional drilling methods will be utilized to install temporary monitoring wells. Temporary

monitoring wells will be completed as specified in the addendum to Appendix C of the SAP, Section C.5.7 (IT, 1998c).

Sample documentation and chain of custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

4.2.4 Surface Water Sampling

Two surface water samples will be collected from the intermittent creek at the foot of the incline northeast of the Chapel.

4.2.4.1 Sample Locations and Rationale

The surface water sampling rationale is listed in Table 4-1. Surface water samples will be collected from the locations proposed on Figure 4-1. The surface water sampling designations and required QA/QC sample quantities are listed in Table 4-4. The exact sampling locations will be determined in the field by the ecological sampler based on drainage pathways and actual field observations.

4.2.4.2 Sample Collection

Surface water samples will be collected in accordance with the procedures specified in Section 4.9.1.3 of the SAP. Sample documentation and chain of custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the parameters listed in Section 4.5.

4.2.5 Sediment Sampling

Two sediment samples will be collected at the same locations as the surface water samples presented in Section 4.2.4.

4.2.5.1 Sample Locations and Rationale

The proposed locations for the two sediment samples to be collected are shown in Figure 4-1. Sediment sampling rationale is presented in Table 4-1. The sediment sampling designations and required QA/QC sample quantities are listed in Table 4-4. The actual sediment sample points

selected will be at the discretion of the ecological sampler based on the drainage pathways and actual field observations.

4.2.5.2 Sample Collection

Sediment sample collection will be conducted in accordance with the procedures specified in Section 4.9.1.2 of the SAP. Sample documentation and chain of custody will be recorded as specified in Section 4.13 of the SAP. The sediment samples will be analyzed for the parameters listed in Section 4.5.

4.2.6 Depositional Soil Sampling

One depositional soil sample will be collected at the Chapel site.

4.2.6.1 Sample Locations and Rationale

One depositional soil sample will be collected upgradient of the parcel from the natural drainage and the foot of the incline. The sampling rationale is listed in Table 4-1. The proposed tentative sampling locations are shown in Figure 4-1. The depositional soil sampling designations and required QA/QC sample quantities are listed in Table 4-4. The actual depositional soil sample points selected will be at the discretion of the ecological sampler based on the drainage pathways and on actual field observations.

4.2.6.2 Sample Collection

The depositional soil sample will be collected in accordance with the procedures for surface soil sample collection specified in Section 4.9.1.1 of the SAP. Sample documentation and chain of custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The sample will be analyzed for the parameters listed in Section 4.5.

4.3 Surveying of Sample Locations

Sampling locations will be marked with pin flags, stakes, and/or flagging and will be surveyed using either global positioning system (GPS) or conventional civil survey techniques, as necessary to obtain the required level of accuracy. Horizontal coordinates will be referenced to the Alabama State Plane Coordinate System, 1983 North American Datum (NAD83). Elevations will be referenced to the National Geodetic Vertical Datum of 1929 or the North American Vertical Datum of 1988 (soon to be established on site).

Horizontal coordinates for soil, groundwater, sediment/surface water and/or depositional soil locations will be recorded using a GPS to provide accuracy within 1 meter. Direct-push temporary wells will be surveyed to an accuracy of 0.1 foot for horizontal coordinates and 0.01 foot for elevations, using survey-grade GPS techniques and/or conventional civil survey techniques, as required.

Procedures to be used for GPS surveying are described in Section 4.3 of the SAP. Conventional land survey requirements are presented in Section 4.19 of the SAP.

4.4 Decontamination Requirements

Sampling and non-sampling equipment will be decontaminated primarily to ensure that contaminants are not introduced into samples from location to location. Decontamination of sampling equipment will be performed in accordance with the requirements presented in Section 4.10.1.1 of the SAP (IT, 1998a). Decontamination of non-sampling equipment will be performed in accordance with the requirements presented in Section 4.10.1.2 of the SAP.

4.5 Analytical Program

Samples collected at locations specified in Chapter 4.0 will be analyzed for various physical and chemical properties. The on-site sample coordinator will provide sampling containers and preservatives, and will coordinate sampling procedures with the field sampling crews in accordance with Table 5-1 in the QAP. The specific suite of analyses to be performed is based on the PSSC historically at the site and EPA, ADEM, FTMC, and USACE requirements. Target analyses for samples collected from Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7), include the following list of parameters:

- Target Compound List (TCL) Volatile Organic Compounds – Method 5035/8260B
- TCL Semivolatile Organic Compounds - Method 8270C
- Target Analyte List Metals - Method 6010B/7000

In addition, sediment samples will be analyzed for the following parameters:

- Total Organic Carbon - Method 9060 (sediment only)

- Grain size - American Society for Testing and Materials D421/D422 (sediment only).

The samples will be analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Table 4-5 in this SFSP and Table 6-1 in the QAP. Data will be reported and evaluated in accordance with CESAS Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of the QAP).

Chemical data will be reported via hard copy data packages by the laboratory using CLP-like forms. These packages will be validated in accordance with EPA National Functional Guidelines by Level III criteria.

4.6 Sample Preservation, Packaging, and Shipping

Sample preservation, packaging, and shipping will follow requirements specified in Section 4.13.2 of the SAP (IT, 1998a).

Completed analysis request/chain of custody records will be secured and included with each shipment of coolers to:

Sample Receiving
 Quanterra Environmental Services
 5815 Middlebrook Pike
 Knoxville, Tennessee 37921
 Telephone: (423) 588-6401.

Split samples will be shipped to:

Sample Receiving
 USACE South Atlantic Division Laboratory
 611 South Cobb Drive
 Marietta, Georgia 30060
 Telephone: (770) 919-5270.

4.7 Investigation-Derived Waste Management and Disposal

Investigation-derived waste (IDW) will be managed and disposed of as outlined in Appendix D of the SAP (IT, 1998a). The IDW expected to be generated from the field sampling at FTMC will consist of purge water from temporary well development and sampling activities, decontamination fluids, spent well materials, and personal protective equipment. IDW will be stored inside the fence area surrounding Buildings 335 and 336.

Table 4-5

Analytical Samples
Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7)
Fort McClellan, Calhoun County, Alabama

| Parameters | Analysis Method | Sample Matrix | TAT Needed | Field Samples | | | QA/QC Samples ^a | | | | | Quanterra | QA Lab |
|---|-----------------|---------------|------------|----------------------|---------------|----------------------|----------------------------|-----------------------|-------------|---------------------|-------------------------|--------------------|--------------------|
| | | | | No. of Sample Points | No. of Events | No. of Field Samples | Field Dups (10%) | Splits w/ QA Lab (5%) | MS/MSD (5%) | Trip Blank (1/ship) | Eq. Rinse (1/wk/matrix) | Total No. Analysis | Total No. Analysis |
| Former Washrack, Bldg. 1740, Soldier's Chapel - Parcel 127(7): 5 water matrix: 3 groundwater, 2 surface water; 29 soil matrix: 13 surface soil, 13 subsurface soil, 2 sediment, 1 depositional soil | | | | | | | | | | | | | |
| TCL VOCs | 8260B | water | normal | 5 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 10 | 1 |
| TCL SVOCs | 8270C | water | normal | 5 | 1 | 5 | 1 | 1 | 1 | | 1 | 9 | 1 |
| Total TAL Metals | 6010B/7000 | water | normal | 5 | 1 | 5 | 1 | 1 | 1 | | 1 | 9 | 1 |
| TCL VOCs | 8260B | soil | normal | 27 | 1 | 27 | 2 | 1 | 1 | | 1 | 32 | 1 |
| TCL SVOCs | 8270C | soil | normal | 27 | 1 | 27 | 2 | 1 | 1 | | 1 | 32 | 1 |
| TAL Metals | 6010B/7000 | soil | normal | 27 | 1 | 27 | 2 | 1 | 1 | | 1 | 32 | 1 |
| Total Organic Carbon | 9060 | sediment | normal | 2 | 1 | 2 | | | | | | 2 | 0 |
| Grain Size | ASTM | sediment | normal | 2 | 1 | 2 | | | | | | 2 | 0 |
| Washrack, Bldg. 1740, Soldier's Chapel Subtotal: | | | | | | 100 | 9 | 6 | 6 | 1 | 6 | 128 | 6 |

^aField duplicate, QA split, and MS/MSD samples were calculated as a percentage of the field samples collected per site and were rounded to the nearest whole number.

Trip blank samples will be collected in association with water matrix samples for VOC analysis only. Assumed 4 field samples per day to estimate trip blanks. Equipment blanks will be collected once per event whenever sampling equipment is field decontaminated and re-used. They will be repeated weekly for sampling events that are anticipated to last more than one week. Assumed 20 field samples will be collected per week to estimate number of equipment blanks.

Ship samples to: Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
Attn: John Reynolds
Tel: 423-588-6401
Fax: 423-584-4315

USACE Laboratory split samples
are shipped to:

USACE South Atlantic Division Laboratory
Attn: Sample Receiving
611 South Cobb Drive
Marietta, Georgia 30060-3112
Tel: 770-919-5270

MS/MSD - Matrix spike/matrix spike duplicate.
QA/QC - Quality assurance/quality control.
SVOC - Semivolatile organic compound.

TAL - Target analyte list.
TCL - Target compound list.
VOC - Volatile organic compound.

4.8 Site-Specific Safety and Health

Safety and health requirements for this SI are provided in the SSHP attachment for the Former Washrack, Building 1740, Soldier's Chapel, Parcel 127(7). The SSHP attachment will be used in conjunction with the SHP.

5.0 Project Schedule

The project schedule for the SI activities will be provided by the IT project manager to the Base Realignment and Closure Cleanup Team on a monthly basis.

6.0 References

Environmental Science and Engineering, Inc. (ESE), 1998, ***Final Environmental Baseline Survey, Fort McClellan, Alabama***, prepared for U.S. Army Environmental Center, Aberdeen Proving Ground, Maryland, January.

IT Corporation (IT), 1998a, ***Final Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama***, August.

IT Corporation (IT), 1998b, ***Final Installation-Wide Work Plan, Fort McClellan, Calhoun County, Alabama***, August.

IT Corporation (IT), 1998c, Letter to Ellis Pope from Jeanne Yacoub, "Procedures for Temporary Residuum Monitoring Well Installation, Conversion, and Abandonment," November 1998.

U.S. Army Corps of Engineers (USACE), 1998, ***Statement of Work for Task Order CK005, Modification No. 1, Site Investigations at Fort McClellan, Alabama, Including Ecological Screening Sites (Creeks and Tribs), and Removal of Indoor Firing Ranges***, May.

U.S. Army Corps of Engineers (USACE), 1994, ***Requirements for the Preparation of Sampling and Analysis Plan***, Engineer Manual EM 200-1-3, September 1.

U.S. Environmental Protection Agency (EPA), 1993, ***Data Quality Objectives Process for Superfund***, Interim Final Guidance.